

Practitioner's Docket No. K-1786**PATENT****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Ojanen

Application No.: 09 / 838,348 Group No.: 3673

Filed: April 19, 2001 Examiner: Singh, Sunil

For: ROTATABLLE CUTTING TOOL HAVING RETAINER WITH DIMPLES

Mail Stop Appeal Brief—Patents**Commissioner for Patents****P.O. Box 1450****Alexandria, VA 22313-1450**

**TRANSMITTAL OF APPEAL BRIEF
(PATENT APPLICATION—37 C.F.R. § 41.37)**

NOTE: The phrase "the date on which" an "appeal was taken" in 35 U.S.C. 154(b)(1)(A)(ii) (which provides an adjustment of patent term if there is a delay on the part of the Office to respond within 4 months after an "appeal was taken") means the date on which an appeal brief under § 1.192 (and not a notice of appeal) was filed. Compliance with § 41.37 requires that: 1. the appeal brief fee (§ 41.20(b)(2)) be paid (§ 41.37(a)(2)); and 2. the appeal brief complies with §§ 41.73(c)(i)-(x). See Notice of September 18, 2000, 65 Fed. Reg. 56366, 56385-56387 (Comment 38).

- Transmitted herewith, in triplicate, is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on August 5, 2005

NOTE: Appellant must file a brief under this section within two months from the date of filing the notice of appeal under § 41.31. 37 CFR 41.(a)(1). The brief is no longer required in triplicate. The former alternative time for filing a brief (within the time allowed for reply to the action from which the appeal was taken) has been removed. Appellant must file within two months from the notice of appeal. See Notice of August 12, 2004, 69 FR 49960, 49962.

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* Only the date of filing (§ 1.6) will be the date used in a patent term adjustment calculation, although the date on any certificate of mailing or transmission under § 1.8 continues to be taken into account in determining timeliness. See § 1.703(f). Consider "Express Mail Post Office to Addressee" (§ 1.10) or facsimile transmission (§ 1.6(d)) for the reply to be accorded the earliest possible filing date for patent term adjustment calculations.

2. STATUS OF APPLICANT

This application is on behalf of

other than a small entity.

a small entity.

A statement:

is attached.

was already filed.

3. FEE FOR FILING APPEAL BRIEF

Pursuant to 37 C.F.R. § 41.20(b)(2), the fee for filing the Appeal Brief is:

<input type="checkbox"/> small entity	\$250.00
<input checked="" type="checkbox"/> other than a small entity	\$500.00

Appeal Brief fee due \$ 500.00

4. EXTENSION OF TERM

NOTE: 37 C.F.R. § 1.704(b) ". . . an applicant shall be deemed to have failed to engage in reasonable efforts to conclude processing or examination of an application for the cumulative total of any periods of time in excess of three months that are taken to reply to any notice or action by the Office making any rejection, objection, argument, or other request, measuring such three-month period from the date the notice or action was mailed or given to the applicant, in which case the period of adjustment set forth in § 1.703 shall be reduced by the number of days, if any, beginning on the day after the date that is three months after the date of mailing or transmission of the Office communication notifying the applicant of the rejection, objection, argument, or other request and ending on the date the reply was filed. The period, or shortened statutory period, for reply that is set in the Office action or notice has no effect on the three-month period set forth in this paragraph."

NOTE: The time periods set forth in 37 C.F.R. § 1.192(a) are subject to the provision of § 1.136 for patent applications. 37 C.F.R. § 1.191(d). See also Notice of November 5, 1985 (1060 O.G. 27).

NOTE: As the two-month period set in § 1.192(a) for filing an appeal brief is not subject to the six-month maximum period specified in 35 U.S.C. § 133, the period for filing an appeal brief may be extended up to seven months. 62 Fed. Reg. 53,131, at 53,156; 1203 O.G. 63, at 84 (Oct. 10, 1997).

The proceedings herein are for a patent application and the provisions of 37 C.F.R. § 1.136 apply.

(complete (a) or (b), as applicable)

- (a) Applicant petitions for an extension of time under 37 C.F.R. § 1.136
(fees: 37 C.F.R. § 1.17(a)(1)-(5)) for the total number of months checked below:

Extension (months)	Fee for other than small entity	Fee for small entity
<input type="checkbox"/> one month	\$ 120.00	\$ 60.00
<input type="checkbox"/> two months	\$ 450.00	\$ 225.00
<input type="checkbox"/> three months	\$ 1,020.00	\$ 510.00
<input type="checkbox"/> four months	\$ 1,590.00	\$ 795.00
<input type="checkbox"/> five months	\$ 2,160.00	\$1,080.00

Fee: \$ _____

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If an additional extension of time is required, please consider this a petition therefor.

(check and complete the next item, if applicable)

- An extension for _____ months has already been secured, and the fee paid therefor of \$ _____ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$ _____

or

- (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

5. TOTAL FEE DUE

The total fee due is:

Appeal brief fee \$ 500.00

Extension fee (if any) \$ _____

TOTAL FEE DUE \$ 500.00

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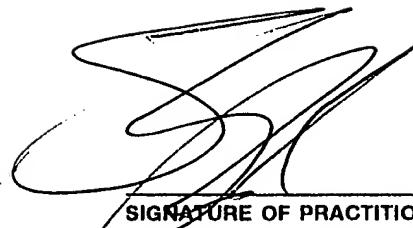
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SIGNATURE OF PRACTITIONER

Stephen T. Belsheim

(type or print name of practitioner)

179 Belle Forrets Cr. Ste. 102

P.O. Address

Nashville, TN 37221

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Date: October 5, 2005

Reg. No.: 28,688

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K-1786
PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of OJANEN)
Serial No. 09/838,348) Group Art Unit 3673
Filed: April 19, 2001)
For: ROTATABLE CUTTING TOOL) Examiner: Singh, Sunil
HAVING RETAINER WITH DIMPLES)

Mail Stop Appeal Brief – Patents
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Date: October 5, 2005

Signature: _____

Rhonda L. Sanders

Type or Print Name of Person Certifying

October 5, 2005

Sir: APPEAL BRIEF UNDER 37 CFR §41.37

INTRODUCTION

This Appeal Brief is being filed within two (2) months of the filing of the Notice of Appeal on August 5, 2005. The appropriate fee accompanies this paper per the accompanying TRANSMITTAL OF APPEAL BRIEF.

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REAL PARTY IN INTEREST

To satisfy the requirement under 37 CFR §41.37(c)(1)(i), Kennametal Inc. of Latrobe, Pennsylvania 15650, the assignee of the present patent application, is the real party in interest.

RELATED APPEALS AND INTERFERENCES

To satisfy the requirement under 37 CFR §41.37(c)(1)(ii), there are no related appeals and interferences.

STATUS OF THE CLAIMS

To satisfy the requirement under 37 CFR §41.37(c)(1)(iii), the status of the claims in the patent application is set forth as follows: (a) claims 1-14, 18-28, 31, 35, and 41-42 are cancelled, and (b) claims 15-17, 29, 30, 32-34, 36-40 and 43-47 are rejected and are under appeal.

STATUS OF AMENDMENTS

To satisfy the requirement under 37 CFR §41.37(c)(1)(iv), there are no amendments that have been filed subsequent to the final rejection via the FINAL Office Action of June 6, 2005.

SUMMARY OF THE CLAIMED SUBJECT MATTER

To satisfy the requirement of 37 CFR §41.37(c)(1)(v), a summary of claimed subject matter is set forth below.

There are two fundamental aspects of the claimed invention. The first is a cutting tool assembly (10) that essentially comprises a cutting tool (12) and a retainer (40) for use therewith as set forth in claims 15-17, 32-34 and 39. The second is a retainer (40) for use in conjunction with a cutting tool as set forth in claims 29-30, 36-38, 40 and 43-47.

In the context of the cutting tool assembly, the claimed invention is a cutting tool assembly (10) for rotatable retention within a bore (20) of a bit holder (18) wherein the bore (20) includes a groove (34). The assembly (10) includes a cutting tool (12) and a

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retainer sleeve (40) carried by the cutting tool (12). The retainer (40) has at least one (or in the case of claims 16 and 34 as plurality of) radially outward projecting dimple (claim 15) (46), which can be semi-spherical (claim 17), or protruding surface (claim 39) that is received within the groove (34). The retainer (40) has a cylindrical circumference and a thickness dimension.

In the case of claim 15, the amount of radial projection of the dimple (46) beyond the cylindrical surface of the retainer (40) is between a minimum equal to about 15 percent of the thickness dimension of the retainer (40) so as to provide sufficient holding force to rotatably retain the cutting tool (12) within the bore (20) during operation and a maximum equal to about 30 percent of the thickness dimension of the retainer (40) so as to provide for a maximum force to allow the removal of the cutting tool (12) from the bore (20) without the necessity of excessive force.

In the case of claim 39, the amount of radial projection of the protruding surface (46) beyond the cylindrical surface of the retainer (40) is between about 15 percent and about 30 percent of the thickness dimension of the retainer (40).

In the context of the retainer (40), the retainer (40) is for use in conjunction with a cutting tool (12). The retainer (40) comprises a retainer sleeve (40) that is carried by the cutting tool (12) and has at least one, or in the case of claim 38 a plurality of or in the case of claim 43 at least two, radially outward projecting dimple(s) (46) (claim 39) or a radially outward protruding surface (46) (claim 40).

The retainer (40) has a cylindrical circumference and a thickness dimension.

The retainer (40) has an endface and a bottom end, wherein a slit (42) extends from the bottom end to the endface (claims 46 and 47).

The amount of radial projection of the dimple (or the protruding surface) (46) beyond the cylindrical surface of the retainer (40) is between about 15 percent and about 30 percent of the thickness dimension of the retainer (40).

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GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

To satisfy the requirement under 37 CFR §41.37(c)(1)(vi), a concise statement of the grounds for rejection to be reviewed on appeal are as follows:

- (1) the rejection of claims 15-17, 29, 30, 32-34, 36-40 and 43-47 under 35 USC §112 ¶1 for failure to satisfy the enablement requirement because one cannot make or use the invention due to the existence in the specification of the language to the effect that the protruding dimples (or surfaces) require "no radial play" in order to extract the cutting bit from the bore of the holder; and
- (2) the rejection of claims 15-17, 29, 30, 32-34, 36-40 and 43-47 under 35 USC §102(e) as being anticipated under U.S. Patent No. 6,397,652 to Sollami.

ARGUMENT

Introduction

To satisfy the requirement under 37 CFR §41.37(c)(1)(vii), the argument is set forth below. This argument first addresses the rejection under 35 USC §112 1¶, and then addresses the rejection under 35 USC §102(e).

The Rejection Under 35 USC §112, ¶1

The Examiner's Position

At page 2 of the FINAL Office Action, the Examiner characterized this rejection as the claims under rejection:

... failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. ...

See page 2 of the FINAL Office Action of June 6, 2005.

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The essence of the Examiner's argument is that the appellant's "no radial play" statement (see page 11, lines 14-17 of the application) is incorrect because there must be some radial inward play in order to insert the cutting bit into the bore. Hence, the Examiner concluded that, "[B]ased on these discrepancies, one skilled in the art cannot make and/or use the invention as claimed." See page 3 of the FINAL Office Action of June 6, 2005.

The Law of Enablement

The pertinent statutory basis (35 USC §112 ¶1) for this rejection reads:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, ...

Under United States patent jurisprudence, the Federal Circuit held in In re Swartz, 232 F.3d 862, 56 USPQ 2d 1703 (Fed. Cir. 2000):

To satisfy the enablement requirement of §112, ¶1, a patent application must adequately disclose the claimed invention so as to enable a person skilled in the art to practice the invention at the time the application was filed without undue experimentation.

It must be kept in mind that the following factors go into the enablement analysis (see Manual of Patent Examining Procedure at MPEP 2164.01(a), page 2100-185 (Rev. 2 May 2004): (A) the breadth of the claims; (B) the nature of the invention; (C) the state of the prior art; (D) the level of one of ordinary skill in the art; (E) the level of predictability in the art; (F) the amount of direction provided by the inventor; (G) the existence of working examples; (H) the quantity of experimentation needed to make or use the invention based on the content of the disclosure.

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It must also be kept in mind that the initial burden is on the Examiner to establish nonenablement. See Manual of Patent Examining Procedure at MPEP 2164.04, page 2100-189 (Rev. 2 May 2004).

Appellant's Position

Appellant submits that a thorough analysis of the situation shows that the claims satisfy the enablement requirement. A review of the factors as set forth in the Manual of Patent Examining Procedure is set forth below.

Factor (A)

Factor (A) pertains to the breadth of the claims. Here, the claims are not overly broad. There is no explicit language about the retainer exhibiting "no radial play". In regard to the extent the dimple projects beyond the cylindrical surface of the retainer, which is the structure that pertains to the "no radial play" statement, claims 15, 16, 17, 32, 33 and 34 recite that:

... the amount of radial projection of said dimple beyond the cylindrical surface of the retainer is between a minimum equal to about 15 percent of the thickness dimension of the retainer ... and a maximum equal to about 30 percent of the thickness dimension of said retainer ...

The balance of the claims (i.e., 29, 30, 36-40 and 43-47) recite:

... the amount of radial projection of said dimple [or radially outward protruding surface] beyond the cylindrical surface of the retainer is between about 15 percent and about 30 percent of the thickness dimension of said retainer.

The above language is clearly addressed in the disclosure. See Page 11, lines 20-23; page 17, lines 13-17; and as-filed claims 15 and 29.

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Appellant submits that the disclosure of the application has communicated this invention to the public in a meaningful way so as to enable one skilled in the art to make the cutting tool assembly (i.e., cutting tool and retainer sleeve), as well as the retainer. There is nothing in the analysis of Factor (A) that supports the Examiner's position with respect to a lack of enablement.

Factors (B) through (E)

These factors are (B) the nature of the invention; (C) the state of the prior art; (D) the level of one of ordinary skill in the art; and (E) the level of predictability in the art. None of these factors weighs in favor of a finding that the claims do not satisfy the enablement requirement.

The invention pertains to the art of rotatable cutting tools that are typically held in a block that is itself attached to a driven drum. The cutting tool has a hardened tip (e.g., cemented tungsten carbide) at the axial forward end thereof. The drum rotates so as to drive the cutting tools into the material to be impacted such as, for example, asphaltic roadway material.

The state of the art is such that there are numerous patents that show and describe these kinds of tools in a general sense. These patents also show and describe resilient retainers in general. In this regard, appellant refers the Board to the citation by appellant and the Examiner of at least about thirty-four (34) documents. See the citation of documents attached to the Office Action of September 11, 2002. Further, in the Office Action of January 22, 2004, the Examiner applied about eighteen (18) documents against the claims. It is apparent that the art of rotatable cutting tools that carry a resilient retainer is not a new art.

The level of one of ordinary skill in the art would appear to include persons who have had at least several years of experience in this area of rotatable cutting tools used in the road planing and mining industries. Such a person would be familiar with the

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construction of resilient retainers and the interaction between the retainer and the bore of a holder that receives the cutting tool carrying the retainer.

In light of the mechanical nature of the art, the level of predictability in the art would be high, i.e., the art is a predictable art.

All of these Factors (B) through (E) show that the claims satisfy the enablement requirement.

Factor (F)

Factor (F) is the level of direction provided by the inventor. Here, it is important to consider the totality of the disclosure set forth in the application.

Appellant respectfully submits that the Examiner has misconstrued the “no radial play” statement to mandate that the sleeve of the present invention has no radial play whatsoever. This is not what the specification says when read in the correct context.

In this regard, it is imperative to keep in mind that to properly construe the text-in-question (i.e., the “no radial play” statement at page 11, lines 14-17), one has to read this sentence in its context and through the eyes of a person skilled in the pertinent art. In this regard, the “same drawback as the prior art” referred to in the above-quoted text at page 11, lines 14-17 is the drawback referred to in the earlier paragraph that concerns the difficulty in the removal of the cutting bits as had been experienced by some prior art tools due to the accumulation of dirt and debris. This paragraph, which is at page 10, line 34 through page 11, line 13 of the application, and the text-in-question together read as follows:

U.S. Patent No. 4,484,783 to Emmerich, and 3,519,309 to Engle et al. disclose retainers having radially protruding surfaces (dimples, bulge) that cooperate with a notch of the bit holder bore. These protruding surfaces of the retainer are spring loaded so as to expand into the bore notch whenever the cutting tool/retainer assembly is inserted into the bore. These type prior art designs often became difficult to remove from bit holders after continued

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usage on cutting equipment. When these type prior art designs are used on mining and construction equipment, dirt and cutting debris would penetrate the clearances between the shank, retainer and bit holder bore and accumulate in the shanks annular groove. This debris and dirt interferes with the inward radial play of the radially protruding surfaces, making the tools very difficult and sometimes impossible to remove.

The invention includes protruding dimples that are designed to require no radial play and, therefore, do not suffer from the same drawback as the prior art.

Appellate submits that the only reasonable reading of the above-quoted text is that the “same drawback as the prior art” has to do with the difficulty in the removal of the tool when dirt has accumulated between the retainer and the tool body and has nothing to do with the insertion of the cutting bit into the bore of the bit holder tool.

To appreciate this condition, an enlarged copy of FIG 8 of Engle et al. (Appeal Exhibit 1 (i.e., Exhibit A that was attached to the Response to the Office Action of July 26, 2004)) and FIG. 6 of Emmerich (Appeal Exhibit 2 (i.e., Exhibit A-1 that was attached to the Response to the Office Action of July 26, 2004)) were modified to show the accumulation and compaction of dirt and debris between the retainer and tool shank. When in this condition, it seems apparent that the dimple must exhibit inward radial play or else require an excessive amount of force to shear these dimples so as to remove the tool from the bore of the holder.

In contrast, an enlarged view of FIG. 12 of the present application (Appeal Exhibit 3, i.e., Exhibit B that was attached to the Response to the Office Action of July 26, 2004) was modified to show the condition when dirt and debris are between the retainer and the tool body. When in this condition it is apparent that less radial inward play (or movement) of the dimple (46) is necessary to remove the tool using the retainer of FIG. 12 than with the tools shown in the patent to Engle et al. or in the patent to Emmerich.

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The statement at page 11, lines 14-17 of the present specification refers to the design of the dimples wherein they “require no radial play” for the removal of the tool. The plain and simple meaning of this language is not that there may not be any radial play of the dimples upon removal of tool, but only that radial play is not a requirement for removal of the tool. The potential for radial play, especially upon insertion, becomes apparent from the language at page 12, lines 15-21 of the present patent application that reads:

The flared mouth section 32 of the bore 20 provides from a smooth reception of the dimples about the circumference of the retainer of the cutting tool during installation of the cutting tool into the bit holder. The cooperation of the dimples with a notch improves the strength of the connection between the retainer and bit holder.

In view of the fact that the flared mouth section would compress the retainer upon insertion of the tool into the bore, and the mention of the cooperation of the dimples with the notch (which implies a radial outward movement), it is clear that the specification teaches a retainer that has radial movement.

Inward radial play of the dimples is not a requirement to remove the tool because the dimples only project in a radial outward direction between about 15 percent and about 30 percent of the thickness dimension of the retainer. This is, of course, in significant contrast to prior art dimples like those taught in Engle et al. and Emmerich (patents that were used in an earlier Office Action), as well as the ‘652 Sollami patent used in the FINAL rejection under appeal, that due to their more extended projection, must experience some inward radial play in order to remove the tool without the exertion of excessive force.

Overall, it is apparent that appellant has provided sufficient direction as to how to make and use the claimed invention.

Factors (G) and (H)

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Since this is not a chemical application, the lack of specific working examples is not a detriment to the enablement issue.

The content of the disclosure is sufficient so that very little experimentation, and most likely no experimentation, would be necessary to achieve the invention as claimed.

Conclusion

A review of all the above-cited factors as set forth in the Manual of Patent Examining Procedure show that there is no evidence that establishes, or even tends to establish, that the claims fail to satisfy the enablement requirement. After considering the evidence as a whole, it is clear that the Examiner cannot carry his burden to establish a lack of enablement, and in fact, the above discussion shows that the claims satisfy the enablement requirement.

Appellant solicits the reversal of this rejection with a remand back to the Examiner for the removal of this rejection.

The Rejection of the Claims 35 USC §102(e)

The Examiner's Position

The Examiner has rejected claims 15-17, 29-30, 32-40 and 43-47 under 35 USC §102(e) as being anticipated by the '652 Sollami patent. In short, the Examiner stated that all of the limitations of the claims exist in the '652 Sollami Patent.

Appellant's Position

The upshot of appellant's argument is that the claims call for dimples that do not protrude to the same extent as do the prior art dimples. To best appreciate the strength of appellant's argument, one must appreciate that the extent of the protrusion is a meaningful feature of the invention that provides a meaningful advantage.

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In this regard, in contrasting the present dimples against retainers that have larger projections (e.g., see U.S. Patent No. 4,484,783 to Emmerich and U.S. Patent No. 3,519,309 to Engle et al.), the present patent application recognizes that the prior art tools with the larger dimples often become difficult to remove because dirt and debris penetrate the clearances between the shank, the retainer and the bit holder bore and accumulate in the shank annular groove. At page 11, lines 10-13, the present patent application reads:

“This debris and dirt interferes with the inward radial play of the radially protruding surfaces, making the tools very difficult and sometimes impossible to remove.”

In light of the larger size of the protrusions in the retainers of the ‘783 Patent and the ‘309 Patent, a significant amount of inward radial play is necessary to retract the protrusions so as to be able to remove the retainer.

If dirt and debris penetrates the volume between the retainer and the groove in the shank of the tool so the retainer is unable to contract in the radial inward direction a sufficient distance, the tools cannot be removed without shearing off the protrusions. This is contrast to the present invention that, “... includes protruding dimples that are designed to require no radial play and, therefore, do not suffer from the same drawback as the prior art.” The reason that the dimples of the present invention do not require inward radial play to be removed is because they extend a smaller distance away from the surface of the retainer. This is a meaningful advantage over the prior art that includes tools with a retainer with the larger protrusions or dimples.

In addressing the numerical range as set forth in the claims, the Examiner used the ‘652 Sollami Patent and wrote, “... the amount of radial projection of said protruding surface beyond the cylindrical surface of the retainer is between about 15 percent and about 30 percent of the thickness dimension of said retainer (see Fig. 15).” See page 4 of the FINAL Office Action of June 6, 2005. Attached hereto as Appeal Exhibit 4 (i.e., Exhibit H attached to the Response to the Non-Final Office of February 1, 2005) is an enlarged copy of

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the tool illustrated in Fig. 15 of the '652 Sollami Patent. Measurement of the thickness of the retainer ("THICKNESS" in Exhibit H) in comparison to the distance of the radial projection ("RADIAL PROJECTION" in Exhibit H) establishes that the radial projection is about 88.9 percent (RADIAL PROJECTION/ THICKNESS) of the thickness of the retainer.

There are two basic claim recitations. The first recites that:

... the amount of radial projection of said dimple beyond the cylindrical surface of the retainer is between a minimum equal to about 15 percent of the thickness dimension of the retainer so as to provide sufficient holding force to rotatably retain the cutting tool within the bore during operation and a maximum equal to about 30 percent of the thickness dimension of said retainer so as to provide for a maximum force to allow the removal of the cutting tool from the bore without the necessity of excessive force.

The second recites that:

... the amount of radial projection of said dimple [or protruding surface] beyond the cylindrical surface of the retainer is between about 15 percent and about 30 percent of the thickness dimension of said retainer.

In light of this measurement of the radial projection equaling about 88.9 percent, appellant submits that the '652 Sollami patent cannot anticipate the claims under 35 USC §102(e) wherein the claims call for a lesser degree of projection.

Conclusion

Appellant submits that claims 15-17, 29-30, 32-40 and 43-47 are patentable over the '652 Sollami patent. Appellant solicits the reversal of this rejection and a remand to the patent examiner with instructions to allow the claims.

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Conclusion

Appellant respectfully submits that the pending rejections lack merit. Appellant requests that the Board reverse the Examiner and remand the application back to the Examiner

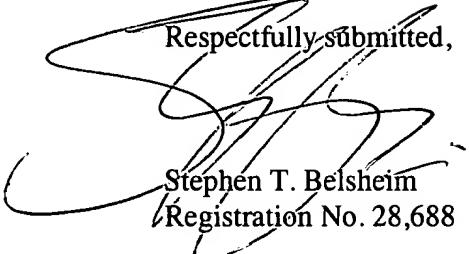
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for allowance of the claims.

Respectfully submitted,


Stephen T. Belsheim
Registration No. 28,688

179 Belle Forrest Circle
Suite 102
Nashville, Tennessee 37221
Telephone 615-662-0100
Facsimile 615-662-0352
CUSTOMER NO. 1400

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CLAIM APPENDIX PER 37 CFR §41.37(c)(1)(viii)

The claims under appeal are set forth below:

15. A cutting tool assembly for rotatable retention within a bore of a bit holder wherein the bore includes a groove, said assembly comprising:

a cutting tool;

a retainer sleeve carried by the cutting tool, and the retainer including at least one radially outward projecting dimple that is received within the groove;

wherein said retainer has a cylindrical circumference and a thickness dimension;

the amount of radial projection of said dimple beyond the cylindrical surface of the retainer is between a minimum equal to about 15 percent of the thickness dimension of the retainer so as to provide sufficient holding force to rotatably retain the cutting tool within the bore during operation and a maximum equal to about 30 percent of the thickness dimension of said retainer so as to provide for a maximum force to allow the removal of the cutting tool from the bore without the necessity of excessive force.

16. A cutting tool assembly according to claim 15, wherein said retainer sleeve includes a plurality of said dimples spaced relative to one another about the circumference of said retainer sleeve.

17. A cutting tool assembly according to claim 15, wherein said dimples are generally semi-spherical.

29. A retainer for use in conjunction with a cutting tool, said retainer comprising:

a retainer sleeve carried by the cutting tool and including at least one radially outward projecting dimple;

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wherein said retainer has a cylindrical circumference and a thickness dimension:

the amount of radial projection of said dimple beyond the cylindrical surface of the retainer is between about 15 percent and about 30 percent of the thickness dimension of said retainer.

30. A retainer according to claim 29, wherein said retainer sleeve includes a plurality of said dimples equally spaced relative to one another about the circumference of said retainer sleeve.

32. A cutting tool assembly according to claim 15 wherein said dimples extend between about .007 – .020 inches beyond an exterior cylindrical surface of said retainer.

33. A cutting tool assembly according to claim 17 wherein said dimple has a diameter of between about .06 - .10 inches.

34. A cutting tool assembly according to claim 17 wherein said retainer has a plurality of said dimples.

36. A retainer according to claim 29 wherein said dimples extend between about .007 – .020 inches beyond an exterior cylindrical surface of said retainer.

37. A retainer according to claim 29 wherein said dimple has a diameter of between about .06 - .10 inches.

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38. A retainer according to claim 29 wherein said retainer has a plurality of said dimples.

39. A cutting tool assembly, said assembly comprising:
a cutting tool;
a retainer sleeve carried by the cutting tool, and including at least one radially outward protruding surface;
wherein said retainer has a cylindrical circumference and a thickness dimension,
the amount of radial projection of said protruding surface beyond the cylindrical surface of the retainer is between about 15 percent and about 30 percent of the thickness dimension of said retainer.

40. A retainer for use in conjunction with a cutting tool, said retainer comprising:
a retainer sleeve carried by the cutting tool and including at least one radially outward protruding surface;
wherein said retainer has a cylindrical circumference and a thickness dimension;
the amount of radial projection of said protruding surface beyond the cylindrical surface of the retainer is between about 15 percent and about 30 percent of the thickness dimension of said retainer.

43. A generally cylindrical retainer for use in conjunction with a cutting tool, said retainer comprising:
a retainer sleeve carried by the cutting tool and including at least two radially outward projecting dimples;

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wherein said retainer has a central longitudinal axis and a thickness dimension, and all said at least two dimples are generally located within a common radial plane;

the amount of radial projection of said dimple beyond the cylindrical surface of the retainer is between about 15 percent and about 30 percent of the thickness dimension of said retainer,

wherein said retainer is constructed from steel.

44. A retainer according to claim 43 wherein said at least two dimples extend between about .007 - .020 inches beyond an exterior cylindrical surface of said retainer.

45. A retainer according to claim 44 wherein said dimple has a diameter of between about .06 - .10 inches.

46. A retainer according to claim 29 wherein said retainer has an endface, and a bottom end, wherein a slit extends from said bottom end to said endface.

47. A retainer according to claim 40 wherein said retainer has an endface, and a bottom end, wherein a slit extends from said bottom end to said endface.

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EVIDENCE APPENDIX UNDER 37 CFR §41.37(c)(1)(ix)

There is no evidence under Sections 1.130, 1.131 or 1.132 that appellant intends to rely upon in this appeal.

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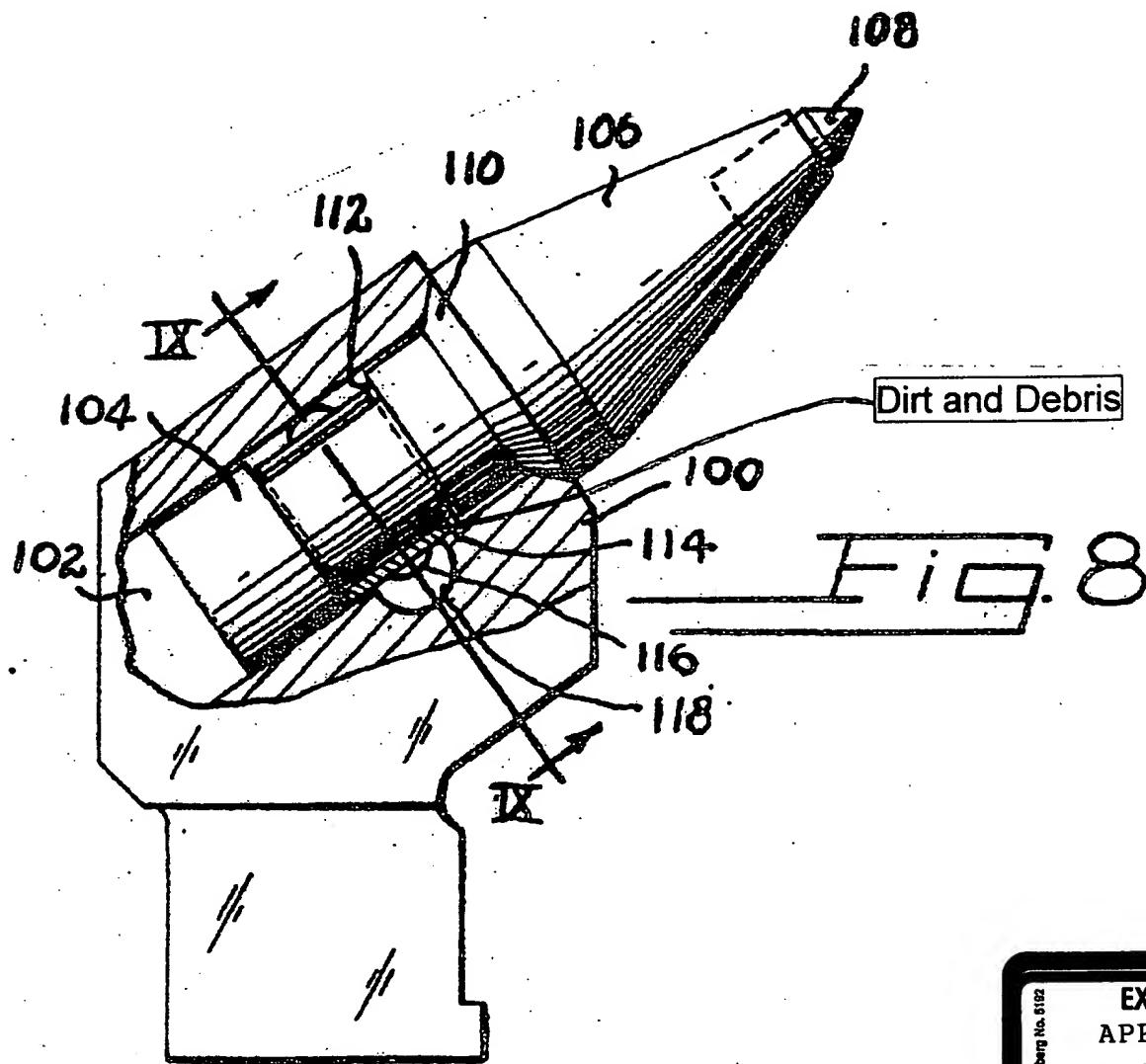
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RELATED PROCEEDINGS APPENDIX UNDER 37 CFR §41.37(c)(1)(x)

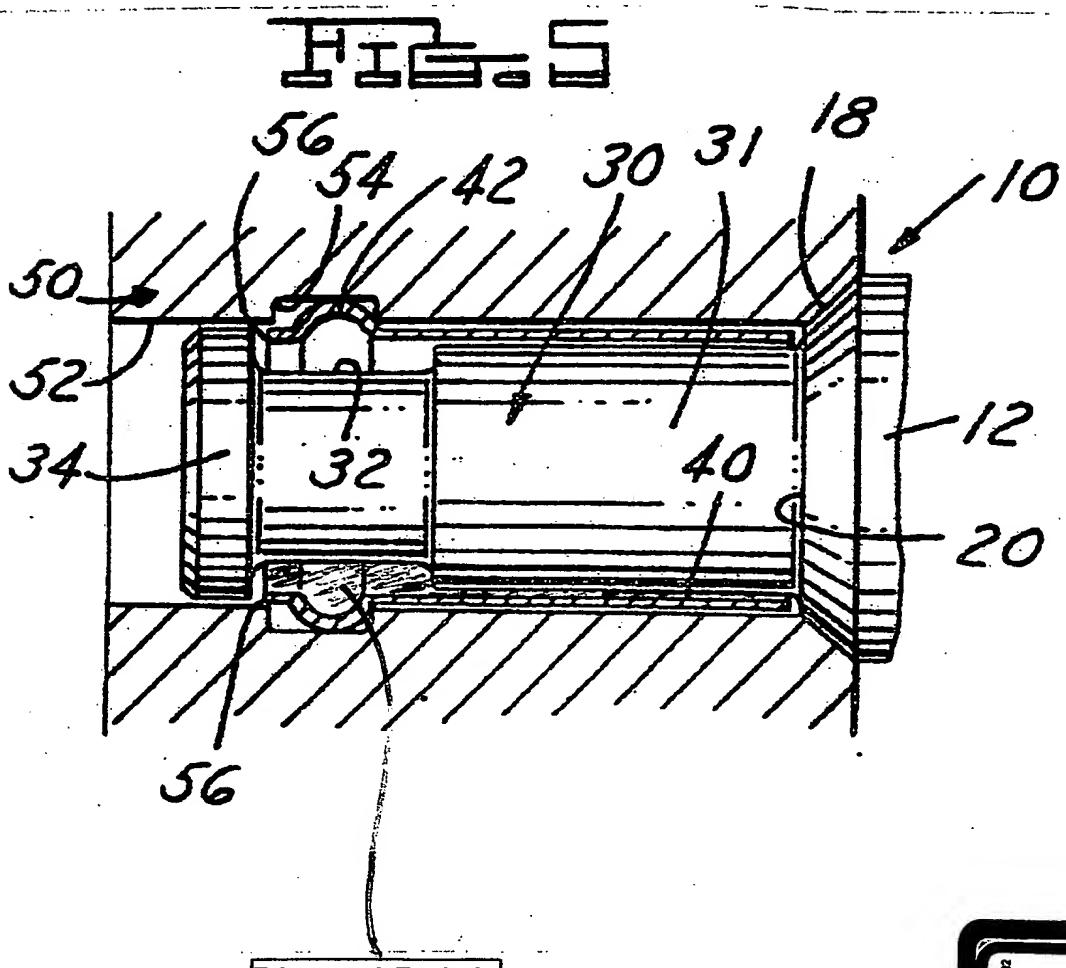
There are no related proceedings.



U.S. Patent No. 3,519,309 to Engle et al.



U.S. Patent No. 4,484,783 to Emmerich



Bloomberg No. 5102

EXHIBIT
APPEAL

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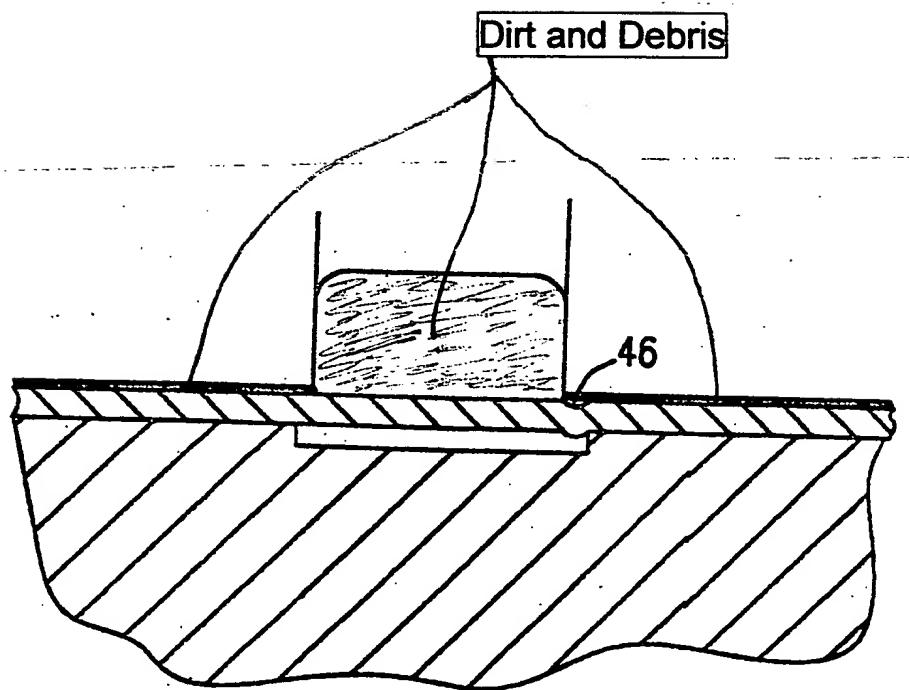


FIG. 12

RADIAL PROJECTION

THICKNESS

